

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method of attaching a biological molecule to a solid support comprising:

- (a) providing a solid support ~~consisting essentially of an organic polymer~~ having at least one available amino group, the solid support being formed from a material selected from the group consisting of cellulose, agarose, polypropylene, polystyrene, polymethacrylate, and nylon;
- (b) reacting the available amino group on the solid support with an activating compound, ~~the activating compound having the structure:~~



wherein  $L_1$  and  $L_2$  are leaving groups, and X is selected from the group consisting of:



wherein

R is selected from the group consisting of alkyl, aryl, and  $OR^+$ ;

$R^+$  is selected from the group consisting of alkyl and aryl; and wherein

the alkyl and aryl groups have having no greater than about 18 carbon atoms;

so that the reaction results in  $L_1$  being displaced by the available amino group on the solid support to form an activated support, wherein the activating compound is 1,2,4-carbonyl di-triazole;

- (c) providing a biological molecule having at least one reactive amino, thiol, or hydroxyl group, the biological molecule being a macromolecule selected from the group consisting of nucleic acids, polypeptide chains, and carbohydrates; and
- (d) reacting the biological molecule with the 1,2,4-carbonyl di-triazole activated support, thereby ~~displacing L<sub>2</sub> and~~ covalently attaching the biological molecule to the solid support so that the biological molecule is available for use in an assay.

2-4. (Canceled)

- 5. (Previously Presented) A method according to claim 1 wherein step (c) comprises depositing between about 5 to about 25 nanoliters of the biological molecule in a circular spot at one or more sites on the activated support, wherein the circular spot has a diameter of between about 10 microns to about 500 microns at one or more sites on the activated support.
- 6. (Previously Presented) A method according to claim 5 wherein one or both of the activating compound and the biological molecule is printed onto the solid support.
- 7. (Previously Presented) A method according to claim 1 wherein in one or both of step (b) and step (d) occurs in a humid chamber.
- 8. (Previously Presented) A method according to claim 6 wherein in one or both of step (b) and step (d) occurs in a humid chamber.
- 9. (Previously Presented) A method according to claim 1 wherein step (b) occurs in an organic solution.
- 10. (Previously Presented) A method according to claim 9 wherein step (b) occurs in the presence of a tertiary organic base.
- 11. (Previously Presented) A method according to claim 10 wherein step (d) occurs in an aqueous solution.
- 12. (Currently Amended) A method of attaching a biological molecule having at least one reactive amino, thiol or hydroxyl group to a solid support, the method comprising:
  - (a) providing a solid support ~~adapted for use in an assay consisting essentially of an organic polymer~~ having at least one available amino group, the solid support

being formed as a plate or film adapted for used in an assay from a material selected from the group consisting of cellulose, agarose, polypropylene, polystyrene, polymethacrylate, and nylon the solid support selected from the group consisting of a plate and a film;

(b) reacting the available amino group on the solid support with an activating compound, the activating compound having the structure:



wherein  $L_1$  and  $L_2$  are leaving groups, and  $X$  is selected from the group consisting of:



wherein

$R$  is selected from the group consisting of alkyl, aryl, and  $OR^+$ ;

$R^+$  is selected from the group consisting of alkyl and aryl; and wherein

the alkyl and aryl groups have having no greater than about 18 carbon atoms;

so that the reaction results in  $L_1$  being displaced by the available amino group on the solid support to form an activated support, wherein the activating compound is 1,2,4-carbonyl di-triazole;

(c) providing a biological molecule having at least one reactive amino, thiol, or hydroxyl group, the biological molecule being a macromolecule; and

(d) reacting the biological molecule with the 1,2,4-carbonyl di-triazole activated support, thereby displacing  $L_2$  and covalently attaching the biological molecule to the solid support so that the biological molecule is available for use in the assay.

13-17. (Canceled)

18. (Previously Presented) A method according to claim 1 further comprising the step of

washing from the solid support non-bound compounds after step (b) and before step (c).

19-24. (Canceled)

25. (Currently Amended) A method according to claim 20 1 wherein the biological molecule is an oligonucleotide having at least one free amino or thiol group.

26-28. (Canceled).

29. (Currently Amended) A method of attaching a biological molecule to a solid support comprising:

(a) providing a solid support ~~consisting essentially of an organic polymer~~ having at least one available amino group, the solid support being formed from a material selected from the group consisting of cellulose, agarose, polypropylene, polystyrene, polymethacrylate, and nylon;

(b) reacting the available amino group on the solid support with an activating compound, ~~the activating compound having the structure:~~



~~wherein  $L_1$  and  $L_2$  are leaving groups, and X is selected from the group consisting of:~~



~~wherein~~

~~R is selected from the group consisting of alkyl, aryl, and  $OR^+$ ;~~

~~$R^+$  is selected from the group consisting of alkyl and aryl; and wherein~~

~~the alkyl and aryl groups have having no greater than about 18 carbon atoms;~~

~~so that the reaction results in  $L_1$  being displaced by the available amino group on the solid support to form an activated support, wherein the activating compound is 1,2,4-carbonyl di-triazole;~~

- (c) providing a biological molecule, wherein the biological molecule is selected from the group consisting of hormones, therapeutic drugs, and drugs of abuse; and
  - (d) reacting the biological molecule with the 1,2,4-carbonyl di-triazole activated support, thereby ~~displacing L<sub>2</sub> and~~ covalently attaching the biological molecule to the solid support so that the biological molecule is available for use in an assay.
- 30.-31. (Canceled).
32. (Previously presented) A method according to claim 1 wherein the solid support is a plate or a film adapted for use in an assay.
33. (Previously presented) A method according to claim 1 wherein the solid support is an amine derivatized organic polymer selected from the group consisting of polypropylene, polystyrene, polymethacrylate, and nylon.
34. (Previously Presented) A method according to claim 1 wherein the biological molecule is an amino derivatized oligonucleotide.
- 35.-37. (Canceled).
38. (New) A method of attaching an oligonucleotide to a solid support comprising:
- (a) providing a solid support having at least one available amino group, wherein the solid support is an amine derivatized organic polymer selected from the group consisting of polypropylene, polystyrene, polymethacrylate, and nylon;
  - (b) reacting the available amino group on the solid support with an activating compound to form an activated support, wherein the activating compound is 1,2,4-carbonyl di-triazole;
  - (c) providing an oligonucleotide having at least one free amino or thiol group; and
  - (d) reacting the oligonucleotide with the 1,2,4-carbonyl di-triazole activated support, thereby covalently attaching the oligonucleotide to the solid support.